Statement of Work

Rocky Mountain National Park

ROMO Roadway Striping Schedule A

Roadway and Parking Striping: Base Bid

Other Bear Lake Road Parking Areas: Option 1

Other Trail Ridge Road Parking Areas: Option 2

Hidden Valley Curve: Option 3

April 2026

Scope of Work

Contractor shall provide the service of striping roadways, intersections, and parking areas parkwide as listed. Contractor shall ensure all striping in each area below is included. This includes but not limited to roadways striping (center and edge), parking stall, intersections, arrows, HWY numbering, hatched areas, misc. symbols, stop lines, crosswalks, and accessible parking areas. Contractor shall provide traffic control, signage, and barricades to perform work safely. Services shall be in accordance with MUTCD standards.

All materials and application of them shall comply with the specifications in Section 02618: Pavement Marking in the Summary of work.

Government will provide all stencils, except where noted otherwise.

BASE BID:

A. Hwy 34 / trail Ridge Road striping. Approximately 13.3 miles long with a double yellow centerline and white edge line/fog lines, from the Rainbow Curve through Milner Pass Trailhead. This section of highway elevation ranges from approximately 10,000 to 12,000 feet above sea level and receives snow from early October through May.

B. Bear Lake Road Striping. Approximately 1.3 miles long segment with a double yellow centerline and white edge line/fog lines. Bear Lake Road elevation ranges from approximately 8,000 feet to 9,900 feet above sea level.

C. All pavement markings in the designated areas. Markings include all parking stall lines, hatched areas, misc. symbols, stop lines, arrows, crosswalks and ABA accessible symbols. Stencils to be contractor procured as described in section D of the base bid. Use MUTCD approved methods to remove pavement markings as indicated on drawings.
    a. Alpine Visitor Center
    b. Many Parks Curve

D. Misc. Pavement Marking
    a. Beaver Meadows Entrance
        i. **Do not** re-mark all lines and symbols.
        ii. Exclusively, add a single 4-inch white line, approximately 400 feet long, such that it results in a double white line along the length of the northernmost “transponder” lane.

    Procure and provide additional aluminum stencils necessary to execute pavement marking. Stencils are to be 5/64” Thick Aluminum and meet MUTCD standards. Stencils to be provided are:

a. 72-Inch “PED XING AHEAD”
b. 12-Inch “DO NOT ENTER”

OPTION 1: Other Bear Lake Road Parking Areas

All pavement markings in the designated areas. Markings include all parking stall lines, hatched areas, misc. symbols, stop lines, arrows, and ABA accessible symbols.

A. Bear Lake Parking
B. Glacier Gorge Parking

Use MUTCD approved methods to remove one (1) unnecessary accessible parking symbol at Sprague Lake Parking area. The symbol has been covered with black paint that must also be removed. This area is located along the Bear Lake Road Corridor, but a specific drawing is not included, coordinate with COR for exact location.

OPTION 2: Other Trail Ridge Road Parking Areas

All pavement markings in the designated areas. Markings include all parking stall lines, hatched areas, misc. symbols, stop lines, arrows, and ABA accessible symbols.

A. Rainbow Curve Parking
B. Forest Canyon Parking
C. Rock Cut Parking
D. Gore Range Parking
E. Milner Pass Parking

OPTION 3: Hidden Valley Curve

Area includes a section of Trail Ridge Road, approximately 2600 LF, includes yellow center lines and white edge/fog lines.

A. Hidden Valley Curve, extended

Period of Performance:

The period of performance is 90 days from Notice to Proceed. All on site work should be completed in 30 consecutive work days between July 7th and October 5th, 2026.

SECTION 01010: SUMMARY OF WORK

PART 1: GENERAL

1-1 DESCRIPTION:
The work covered by this contract is pavement markings and striping as determined by contract description on the roads and parking areas within Rocky Mountain National Park, CO. The contractor shall provide all equipment, labor and materials, quality control, safety, traffic control, and superintendence to paint all stripes and pavement markings of roadways, intersections, and parking areas. **The Contractor shall perform all work in accordance with the recommendations of the Manual Uniform Traffic Control Devices (MUTCD 11th Edition (2023).** All products must meet the specifications for Construction of Roads and Bridges on Federal Highway Projects (FP-14), 2014, as published by the federal Highway Administration. This acquisition is being conducted per the procedures authorized in Part 15 of the Federal Acquisition Regulations. The term "bid" and "bidders" shall mean "offer" and "offeror".

1-2 EXAMINATION OF SITE:

A. Pre-Installation Meeting: Prior to installation of any materials, the Contractor will conduct a pre-installation meeting to discuss the scope of the work and review installation requirements. The pre-installation meeting shall be attended by all parties involved in the installation of permanent pavement markings in Rocky Mountain National Park.

B. Verify Site Conditions: Notify the Contracting Officer if the site conditions are not acceptable. Do not begin preparation or installation until unacceptable conditions have been corrected.

C. Verify layout of pavement markings: Notify the Contracting Officer if layout is not acceptable. Do not begin preparation or installation until unacceptable conditions have been corrected.

1 -3 CONSTRUCTION CAMP:
Establishment of a work camp within the park will not be permitted. There are no quarters, trailer spaces or campground spaces available within the NPS or concessionaire operated facilities in the park. The Contractor must make any necessary arrangements for food and lodging with facilities outside of the park.

1-4 CONTRACTOR OPERATIONS:
The Contractor shall always conduct operations to ensure the least inconvenience to the public. When required for construction operations AND APPROVED BY THE Contracting Officer, periodic road closures of 15 minutes or less may be permitted. Flagging and signing as per Section 01530 for the safety of the contractor's employees, government inspectors and the public. No work is to be scheduled on Fridays, weekends or holidays due to heavy visitation. Work within the parking lots shall be conducted at night to limit impact to park operations and visitation and ease of construction for the contractor.

A. PARK REQUIREMENTS:
The contractor shall adhere to all park requirements, rules, and regulations and posted speed limits within all park boundaries.

1. Use of Site: Do not disturb portions of project site beyond areas in which the work is indicated.
2. Wildlife:
   (a) Do not feed or disturb wildlife within the park boundaries. Do not approach or remain within 25 yards of any wildlife.
   (b) All construction personnel working in the field must follow park food storage regulations, 36 CFR 2.10. All food, garbage, toiletry, or other bear attractants must not be left unattended for any length of time.
      (1) These items shall be stored inside vehicle trunks.
      (2) In vehicles without trunks, place items as low in the vehicle compartment as possible and covered from sight, with all windows and doors closed and locked.

1-5 EQUIPMENT CLEANING:

All contractor equipment shall be washed free of organic materials before entering the Park to prevent invasive species from accessing and populating roadsides and work areas throughout the Park.

A. The contractor is required to wash equipment, with emphasis on undercarriages, with a high-pressure spray prior to transporting such equipment to Rocky Mountain National Park.

B. All Vehicles and Construction Equipment entering Rocky Mountain National Park shall be inspected and approved by NPS prior to being hauled to the park. Contractor must notify CO at least two business days before needing an inspection.

C. Equipment not deemed clean by the NPS will not be allowed entry to Rocky Mountain National Park.

D. The contractor remains liable for additional transportation costs incurred if equipment fails inspection.

1-6 MATERIALS STORAGE:
Confine storage of materials to locations as designated by the Contracting Officer as per Section 01600.

1-7 PRESERVATION OF NATURAL FEATURES:
All operations shall be confined to within the work limits of the project. Exercise special care to maintain natural surroundings undamaged. Restoration of any and all damages and applicable restoration shall be the sole responsibility of the contractor. Such restoration shall be at no additional cost to the Government.

A. Contractor shall replace all damaged trees, shrubs, or vegetated areas as directed by the Contracting Officer and at no additional cost to the Government.

B. General Damage: The contractor will be held accountable for all damages to government property, including, but not limited to walls, paved surfaces, building structures and plants.

C. Plant Damage. The Contractor will be held accountable for all damage to government plants. The Contractor will be responsible to either replace or convey fiscal amount equivalent to Replacement to replacement of said damaged plant/s to the Park.

1-8 HAULING RESTRICTIONS:
The Contractor shall be responsible for compliance with all applicable rules and local, State and Federal regulations governing truck operations within the Park. All trucks must be equipped with complete and functional safety, lighting and braking equipment and properly licensed drivers.

The Contractor shall comply with all legal load and width restrictions in the hauling of materials and equipment. Load restrictions on park roads are identical to the state load restrictions with such additional regulations as may be imposed by the Park Superintendent.

All Contractor vehicles must obtain proper permits to obtain entry into the park from the Contracting Officer or Contracting Officers Representative (COR). Vehicles without permits will be assessed the entry fee at the entrance gate.

1-9 CONTRACTOR FURNIScIsoHED ITEMS: All materials shall be Contractor-furnished from outside of the park unless otherwise specified.

1-10 SAFETY: Occupational Safety and Health Administration governs the safety in the National Parks. The Contractor shall take all safety precautions necessary. This includes all precautions involving machinery and equipment, to protect the lives and health of employees and other persons, prevention of damage to property, supplies and equipment. The Contractor shall comply with applicable Federal, State and local safety, health and sanitation laws and codes. The Contractor shall apply all necessary fire control and preventative measures and equipment as the Contracting Officer may determine to be necessary for the protection of life and property and the health of personnel.

SECTION 01300: SUBMTTALS

PART 1: REQUIRED SUBMITTALS

1-1 REQUIRED SUBMITTALS TO BE INCLUDED WITH PRICE QUOTE:

A. Three previous examples of applying permanent pavement markings on roadways and parking areas with similar quantity and complexity to be installed for this project.

B. Manufacturer's information for materials to be used on the project including but not limited to paint and glass beads.

C. Material safety data sheets (MSDS) for all products and chemicals to be provided in the completion of this contract.

1-2 REQUIRED SUBMITTALS TO BE SUBMITTED AFTER ISSUANCE OF CONTRACT AWARD:

A. Construction Schedule.

B. Certificate of liability insurance and workman's compensation due within 7 days after award.

C. Accident prevention plan.

D. Detailed traffic control plan.

PART 2: GENERAL

1-1 SUBMITTAL PROCEDURE: These submittals shall be site specific to the work in this agreement. At least 30 days prior to the need for approval, the Contractor shall forward to the Contracting Officer all items required by the individual sections of the specifications.
The government has 21 calendar days to accept or reject each submittal from the date of receipt.

1-2 CONTRACTING OFFICER'S APPROVAL:
The Contracting Officer' Representative will indicate acceptance or rejection of each submittal. Rejection will indicate noncompliance with the drawings and or the specifications. Any work done prior to acceptance shall be at the Contractor's own risk

1-3 CERTIFICATES:
For those items called for in individual sections, furnish certificates from manufacturers, suppliers, or other information that indicates the materials or equipment being furnished under the Contract comply with the requirements of these specifications.

1-4 PROGRESS SCHEDULE:

A. Projects less than one working week (Monday through Friday) in duration do not require a progress schedule; however prior coordination and approval must be made regarding the days the contractor will be on site.

1-5 ACCIDENT PREVENTION PLAN and SAFETY:

A. The Contractor shall take all safety precautions necessary. This includes all precautions involving machinery and equipment, to protect the lives and health of employees and other persons, prevention of damage to property, supplies and equipment. The Contractor shall comply with applicable Federal, State and local safety, health and sanitation laws and codes. The Contractor shall apply all necessary fire control and preventative measures and equipment as the Contracting Officer may determine to be necessary for the protection of life and property and the health of personnel

B. Prior to the start of any work submit to the Contracting Officer, a proposed Safety Plan together with the name of the supervisory employee designated to carry out the program. The contractor shall assure the Plan is contract specific by addressing contract specific safety issues. The program shall outline the hazards associated with each major phase of construction and the methods proposed to ensure the safety of the Contractor's employees, the public and all visitors from these hazards. The Contractor is responsible for the safety and security of his work site.

SECTION 01530: WARNING DEVICES

PART I: GENERAL

1-1 DESCRIPTION:
The work of this section consists of furnishing, installing and maintaining all necessary warning devices and taking all necessary precautions for the protection of the work and the safety of the public.

PART 2: MATERIALS

2-1 WARNING DEVICES:
Warning devices may be new or used but shall be suitable for the intended purpose. Warning devices shall be neat in appearance and structurally adequate.

All warning devices used by the Contractor shall be in accordance with the Manual Uniform Traffic Control Devices (MUTCD 2009).

PART 3: EXECUTION

3-1 DESCRIPTION:
Erect and maintain barricades, lights and all other warning devices and take all necessary precautions for the protection of the work and the safety of the public. In particular, the Contractor shall be responsible for preventing tracking of the fresh paint by use of sufficient signs, chase vehicles, flaggers, cones, changeable message signs, etc.

3-2 SIGNS:
All construction warning sign placement and use shall be as per the MUTCD. All construction warning

signs shall be at least 36 inches by 36 inches in size, have black legend on an orange background and be reflectorized if displayed at night. Signs mounted on portable stands shall have the bottom of the sign at least **one foot above** the pavement level.

3-3 TRAFFIC CONTROL:
No more than one lane of traffic shall be closed at any time unless specifically approved by the Contracting Officer, if traffic is to be stopped it shall not be stopped for more than 15 minutes. Signs shall be placed so as to adequately warn approaching traffic of the work zone.
All workers shall wear an orange or lime/yellow green vest /shirt for visibility, complying with Class III high-visibility apparel (ANSI/ISEA 107). To stop traffic either red, 24-inch by 24-inch flags or red, 18-inch STOP/SLOW paddles may be used. Cover or remove the "FLAGMAN/AHEAD" signs whenever the flagger(s) are not on duty.
Any Flagger shall have a Colorado Flagging Certification and must be submitted prior to start of work.
Flagging is required on roadways with a total paved width of 24 feet or less, where blinded travelers may create unsafe travel, or at intersections when normal travel through the intersection is obstructed during striping operations. Both lanes will be stopped until paint has dried. The use of two-way radios is required under these conditions to minimize road closures time.
Adequate traffic control and warning must be maintained on all roads, both greater and less than 24 feet wide.

3-4 TRAFFIC CONTROL IN PARKING AREAS:
The Contractor's parking area striping activities shall not entirely close parking in that area. A portion of the area may be closed. Maintain proper signing, barricades, etc., to provide traffic control and work protection. Obtain approval from the Contracting Officer prior to closing portions of the parking areas. Work will be required in parking areas while area and individual parking spaces are occupied by park visitors. Schedule work to avoid high occupancy periods. Manual and specialized methods will be required to complete work in parking areas occupied by park visitors' vehicles.

SECTION 01560: TEMPORARY CONTROLS

PART 1 GENERAL

1-1 HOUSEKEEPING:
Keep project neat, orderly and in a safe condition at all tunes. Immediately remove all hazardous rubbish. Do not allow rubbish to accumulate. Provide on-site containers for collection of rubbish and dispose of it at frequent intervals during progress of work. Wet down dry materials and rubbish to prevent blowing dust events. Keep volatile wastes in covered containers. Any animal attracting materials or wastes shall be properly stored in hard-sided sheds or vehicles.

1-2 DISPOSAL:
No burning will be permitted inside of the park. All volatile wastes or oils shall be prevented from reaching storm drains and streams. Disposal of all waste materials and debris shall be outside of the Park, in accordance with all Federal, State and local regulations. Special care shall be taken to keep project-generated debris within the work limits of the project.

1-3 AIR AND WATER POLLUTION CONTROL:
Take all necessary reasonable measures to reduce air and water pollution by any material or equipment used during construction. Disposal of volatile wastes or oils shall not occur. All streams and bodies of water shall be protected from waste materials and all products used on the job. Be aware of storm water paths.

1-4 FIRE PREVENTION AND PROTECTION:

Take all necessary precautions to prevent fire during the project. Flammable materials shall be stored away from buildings at locations as approved by the Contracting Officer. Provide and maintain suitable fire protection equipment on painting equipment

1-5 COMPLIANCE:
The Contractor shall, in the performance of this contract, comply with the applicable provisions of Federal, State, and municipal safety, health and sanitation laws and codes.

1-6 CARE OF PROPERTY:

A. The Contractor shall conduct his work so as not to interfere with the ordinary use of roads and other facilities. Please note that concurrent construction in the area is likely and contractor coordination is advised.

B. The Contractor shall protect the immediate work area from damage during work and shall be held responsible for any damage incurred from overspray, spills, or equipment failure which affects the road surface or any vehicle or facility. If a spill occurs as a direct result of the Contractor's actions or negligence, the cleanup of such spill shall be performed by the Contractor at the Contractor's expense. It shall be the responsibility of the Contractor to clean and/or repair all spattered or damaged surfaces.

C. If a spill of 1 gallon or greater occurs, the contractor shall notify the Contracting Officer or her representative within one hour.

D. The Contractor shall be held responsible for the conduct of all employees and subcontractor employees while they are working within the park.

1-7 FINAL CLEANUP:
Upon completion of all work, all trash, equipment and containers shall be removed from the park and the entire job left in a clean and acceptable condition to the satisfaction of the Contracting Officer. All trash shall be disposed of properly, and in accordance with all federal, state and local regulations, outside of the Park.

SECTION 01600; MATERIALS AND EQUIPMENT

PART I: GENERAL

1-1 USE OF SPACE:
The Contractor shall be respectful of all use of space in the Park (a living museum). The Contractor shall be responsible for all materials and equipment to be stored or remaining onsite for the life of this contract. Equipment and supplies shall meet all safety requirements. The Government will not be liable for any equipment, supplies and materials that are stored at the job site. The Contractor shall store all materials in contractor provided facilities. Equipment, operations, and material shall be confined to the limits of work as designated by the Contracting Officer.

1-2 TRANSPORTATION AND HANDLING:
Arrange deliveries of materials in accordance with construction schedules and coordinate to avoid conflict with work and conditions at the site. Deliver materials in undamaged condition, in manufacturer's original containers or packaging, and with identifying labels intact and legible.
The Contracting Officer will not coordinate deliveries, unload material or handle materials.

Contractor shall have the necessary equipment to load and unload pallets of glass beads and barrels of paint.

1-3 REJECTION OF MATERIALS:
After the materials have been delivered, the Contracting Officer may take representative samples from the containers during the progress of the work and examine the samples for compliance with the specifications. All materials to remain at completion of work shall be new and without defect. Should the materials develop any condition denoting failure to comply with the specifications prior to final acceptance, the materials will be rejected.

1-4 PACKAGING AND MATERIALS:
Paint shall be delivered in such capacity containers as may be ordered. Paints manufactured under these specifications shall be shipped in containers constructed, sealed and packed so as to withstand rough handling. Paints received at destination in a damaged condition will be rejected. Each container shall bear a label with the following information shown thereon: Name and address of the manufacturer, shipping point, trademark or trade name, kind of paint, formula or formula number referring to manufacturer's guaranteed formula, number of gallons, date and batch number.

1-5 STORAGE AND PROTECTION:
Materials may be stored at locations within the park as designated by the Contracting Officer. Materials shall be stored in accordance with the manufacturer's instructions, with seals and labels intact and legible and accessible for inspection. Store products, subject to damage by the elements, in weather-tight enclosures. Maintain temperature and humidity within the ranges required by the manufacturer. The Contractor is responsible for providing storage units to maintain temperature and humidity. The contractor is responsible for contacting and paying for all utility hookups and use needed to maintain proper storage.

1-6 MATERIALS SPECIFIED BY REFERENCE STANDARDS:
Select any item meeting the referenced standard.

SECTION 02618: PAVEMENT MARKING

PART I: GENERAL

1-1 DESCRIPTION:
Pavement marking consists of supplying and applying waterborne, epoxy and thermoplastic highway striping and pavement marking material (paint) to roadways, parking areas, crosswalks and intersections largely to asphaltic concrete.

1-2 SITE ACCESS:
Normal, heavy snow accumulation in the work areas, access to project sites will not be guaranteed between October 1 and June 1 of each year. Contact Contracting Officer for information on site conditions prior to scheduling work. Work will be required in parking areas while area and individual parking spaces are occupied by park visitors. Manual and specialized methods will be required to complete work in parking areas occupied by park visitors.

PART 2: MATERIALS

2-1 PAINT:
Pavement marking paint shall comply with AASHTO M-248, Type "F", or waterborne pavement

markings from the Federal Highway Administration, *Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects*, FP-14 2014, USDOT, FHWA, section 718,718.10, Waterborne Traffic Paint, 718.11 Epoxy Markings or 718.12 Thermoplastic Markings (AASHTO M 249). Centerlines will be yellow paint unless otherwise specified by the contract. Edge lines, stop bars, arrows, crosswalks and lane delineations will be white paint unless otherwise specified. Contractor shall provide a paint submittal.

2-2 GLASS BEADS:
Reflective glass beads, complying with AASHTO M-247, Type 1, shall be used for all paint applied under this contract.

2-3 WATERBORNE TRAFFIC PAINT (FHWA,SSCRBFHP, FP-14, 2014)

A. Furnish an acrylic water base ready-mixed paint for use on asphalt and Portland cement, and asphaltic concrete pavements which conforms to paragraph B. Provide submittal in accordance with section 01300 Submittals.

(a) Composition. Furnish a paint composed of resin solids of 100 percent acrylicpolymer with the exact formulation determined by the manufacturer. Conform to the following:

(1) Pigment, ASTM D3723	45 to 55 percent by mass
(2) Lead, chromium, cadmium, or cobalt ASTM D3335 & ASTM D3718	0 percent by mass
(3) Volatile organic compounds, EPA Method 24	20.0 oz/gallon (150 g/L) max.
(4) Density of paint, ASTM D1475	12.0 lb/gallon (1.44 kg/L) min.
(b) Viscosity. ASTM D562	75-90 Krebs units
(c) Drying time.	
(1) Dry to no pickup, ASTM D711	10 minutes max.
(2) Drying to no track, ASTM D713	90 seconds max.
(d) Flexibility. ASTM D522, using the ¼-in (6.4-mm) cylindrical mandrel	No crackingor flaking
(e) Dry opacity. ASTM D2805, contrast ratio at 319 ft^2/gallon (7.85 m^2/L) spreading rate	0.96 min.
(f) Color.	
(1) White, ASTM D1729	Match FHWA standard highway white
(2) Yellow, ASTM D1729	Match FHWA standard highway yellow
(g) Daylight reflectance. (Without glass beads)	
(1) White, ASTM E1347	84 percent relative to magnesium oxide standard

(2) Yellow, ASTM E1347	55 percent relative to magnesium oxide standard
(h) Bleeding ratio. ASTM D868. Determine reflectance according to ASTM D1347 immediately after drying. Divide the average of three reflectance readings of the paint over the bleeding surface by the average of three readings over the non-bleeding surface to determine the bleeding ratio	0.96 min.
(i) Freeze-thaw stability. ASTM D2243	±5 Krebs units max.

(j) Storage stability. During a 12-month storage period, conform to the following:

(1) No excessive setting, caking, or increase in viscosity; and

(2) Readily stirred to a consistency for use in the striping equipment.

2-5 STENCILS

Contractor shall match all existing pavement markings. Contractor shall use Government Furnished stencils.

2-6 SAMPLING AND ACCEPTANCE

A. Shipment of Materials. The material shall be shipped to the job site in containers that are substantial and shall be plainly marked with the manufacturer's name and address, the color of the material, date of manufacture and batch number.

B. Certification of Compliance. The material manufacturer shall furnish a notarized certification that the material complies with the provisions of this specification. It shall not be inferred that the provisions of a certification of compliance waives state inspection, sampling or testing. The manufacturer shall provide testing results, certified by an independent, nationally recognized testing laboratory.

C. Laboratory Samples. Promptly after execution of the contract the contractor shall notify the Contracting Officer of the sources of material expected to be used. The material manufacturer shall furnish samples of the materials, a minimum of (10) ten days before the date of intended use of the materials.

PART 3: EXECUTION

3-1 PREPARATION:
The striping apparatus shall be equipped with a pressurized air system and be located directly in front of paint spray guns to remove foreign matter and shall be subject to inspection by the Contracting Officer prior to application of paint. Prior to application of striping paint, verify all alignments with Contracting Officer's Representative or the Contracting Officer. Provide all controls needed to maintain proper alignments. All old markings not to be repainted shall be removed using methods described in MUTCD. PAINTING WITH DARK PAINT IS NOT ACCEPTABLE AS A METHOD OF OBLITERATING OLD MARKINGS. Contractor shall schedule a field visit with the CO to review all pavement markings to be made, prior to initiating any marking activities. Contractor may be required to complete a draft layout on the ground, prior to initiating marking, as directed by CO.

3-2 SURFACE PREPARATION/CLEANLINESS:
The contractor shall ensure the road and other surfaces to be painted are free of debris such as gravel, dirt, vegetation and objects that will prevent proper adhesion of paint.

3-3 EQUIPMENT:
Paint and glass beads shall be applied with equipment manufactured specifically for that purpose and only by workers experienced in operating such equipment. The bead applicator shall be located directly behind and synchronized with the paint applicator. Both devices shall be properly shielded to avoid spraying of paint or loss of beads outside of the designated width of line. The equipment shall also be capable of painting a stripe or stripes of the desired width with a tolerance of one-quarter of an inch and be capable of applying two separate stripes, either solid or skip at the same time. For centerline painting, the equipment shall be equipped with an automatic skip control giving the specified broken-line pattern within a linear tolerance of 6 inches over each cycle. **Adequate hand-operated equipment is required to accomplish the painting for stop bars, arrows, symbols, crosswalks, intersection striping, and other areas not readily accessible to the pavement striping machine**.

3-4 REMOVAL:
Removal shall be accomplished with equipment like a horizontal grinder or sand blaster so as to prevent damage to the pavement surface. Make the removal pattern uneven so as not to accentuate the removed marking. Debris from grinding shall be removed from the road surface. It is expected a sweeper/vacuum truck could be necessary for complete removal All equipment shall be properly signed and/or marked for visibility of equipment from a safe distance. Apply asphalt emulsion to all asphalt pavement areas after removal of paint in a manner to blend the removal area with the adjacent asphalt unless otherwise directed by the Contracting Officer. Contractor shall provide a sample removal area for approval by Contracting Officer prior to initiating removal work. Approved test sections shall serve as the standard for removal. Contractor shall suspend work when work is not in compliance with the approved standard and shall be responsible for repair to surfaces damaged by the unacceptable work.

3-5 APPLICATION:

A. All paint shall be mixed and applied according to manufacturer's recommendations.

B. Weather: Paint shall be applied when the air and pavement temperatures are 50° F or higher, the pavement surface is dry and the weather is not foggy, rainy or stormy.

C. Hours of Work: Paint shall be applied during hours approved by the contracting officer.

D. Striping Dimensions: Stripes shall be 4 inches wide. Broken line segments (skip line) shall be 10-feet in length with 30- foot gaps.

E. Application Rates:

1. The minimum rate of application for 4-inch width solid traffic stripes shall be 20.5 gallons per mile. The painted stripe shall be 4 inches wide with a tolerance of plus or minus one-quarter inch.
2. For narrower or wider striping, paint shall be applied at a rate in proportion with the 4-inch stripes.
3. Beads shall be applied at the rate of 8 pounds per gallon of paint, plus or minus 0.2 pound.
4. All stencil lines shall be filled in with paint to provide solid markings, lettering, etc.

F. MARKING PROTECTION:
The Contractor shall protect the pavement markings until dry by placing guarding or warning devices or posting flaggers as necessary for a minimum of 3 hours. Any pavement markings tracked or otherwise damaged shall be corrected/removed at no additional expense to the Government. Forward and rear flag vehicles will be required for all roadway striping operations.

G. QUALITY ASSURANCE:
The contractor shall provide quality control. The Government may, at its discretion, perform quality assurance. The Contracting Officer will check the application at the beginning of each day's paint striping and as often thereafter as considered by the Contracting Officer to be necessary. If equipment fails to produce quality striping within the limits specified, striping shall be stopped until the cause of the trouble is corrected. All stencil lines shall be filled in with paint to provide solid markings, lettering, etc. Pavement markings that are not acceptable to the Contracting Officer shall be corrected/removed by the Contractor at no additional expense to the Government. Pavement markings that are to be removed shall be removed by grinding, sandblasting or by any other means that will remove (not cover) the markings to the satisfaction of the Contracting Officer. Payment may be delayed until unacceptable work is corrected.

3-6 PASSING ZONE PAVEMENT MARKINGS:
Passing zone pavement markings shall be applied as previously striped or as directed by the Contracting Officer, prior to painting application operations. In areas where existing striping is not visible provide lines in accordance with contract drawings. If no drawing is available provide one week notice for government to view contractor's layout for acceptance before painting these road segments.

3-7 PARKING AREA, JUNCTION PAINTING:
Parking lot or junction painting shall be as previously striped, with glass beads embedded. Painting work under this contract shall include striping of all pullouts, turnouts, secondary approach roads, gravel approach roads including painting of stop bars, arrows messages, symbols, and crosswalks at intersections with specified route as well as skip striping, parking stalls including accessible stalls, etc. within those areas. Color of striping is to be white unless otherwise specified. Junctions will be striped as designated by individual contracts. As shown on the contract drawings, remove painting that is no longer applicable using approved methods. The contractor will be responsible for the layout of the painting pattern including crosswalks as noted below.

Crosswalk stripes shall be a series of solid white rectangles with the long edge of the rectangle perpendicular to the direction of pedestrian traffic and shall avoid vehicle wheel paths as practicable. Crosswalks shall be equal in width to the approaching walkway but no less than six feet wide.

Stop Bars shall be 18" wide.

3-8 EDGE STRIPING:
White edge striping is required along a portion of the park roads. Lane width for all edge striping shall be 11 feet or match exiting width unless noted otherwise by individual contracts. The lane width shall be maintained when delineating roadside parking areas/pullouts with skip edge striping. The Contractor will verify these locations during the submittal process period. The location of this edge striping will be designated for submittal.

PART 4: MEASUREMENT

4-1 MEASUREMENT:
As shown on the Schedule of Items, measurement will be one or more of the following methods:

A. Linear: The accepted quantities of pavement markings measured in feet will be measured to the nearest whole foot. Measurement shall include all markings and stripe within the measured area. Measurement will be along painted line on the road, with deduction for unpainted areas caused by broken-line segments.

B. Each: The accepted quantity to be paid will be the actual number of messages, arrows, or symbols, of the size and type specified in the contract and indicated under ITEM on bid schedule chart.